UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,669	09/27/2001	Gene L. Cangiani	0918.0028C	8966

27896 7590 05/05/2005

EDELL, SHAPIRO, FINNAN & LYTLE, LLC
1901 RESEARCH BOULEVARD
SUITE 400
ROCKVILLE, MD 20850

EXAMINER	
CHANG, EDITH M	
ART UNIT	**PAPER NUMBER**
2637	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/963,669	CANGIANI ET AL.
	Examiner	Art Unit
	Edith M. Chang	2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *Nov 22 2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The disclosure is objected to because of the following informalities:

On page 11 lines 6-8, "U.S. Patent application serial No. 09/205,510 entitled "Programmable Waveform Generator for a Global Positioning System", filed December 4, 1998," should be changed to "U.S. Patent application serial No. 09/205,510 entitled "Programmable Waveform Generator for a Global Positioning System", filed December 4, 1998, now U.S. Patent 6,335,951".

Appropriate correction is required.

Claim Objections

2. Claims 2-4 and 40 are objected to because of the following informalities:

Claim 2, line 5: "majority voting logic" is suggested changing to "a majority voting logic"; line 6: "the subset of signals" is suggested changing to "the subset of the plurality of signals".

Claim 4, line 1: "the subset of signals" is suggested changing to "the subset of the plurality of signals".

Claim 40, line 1: "The apparatus of claim 15" is suggested changing to "The apparatus of claim 31.

Claim 3 is dependent on the objected claim 2.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spilker, Jr. (US 6.044,071) in view of Butman et al. ("Interplex-An Efficient Multichannel PSK/PM Telemetry System" IEEE Transactions on Communication).

Regarding **claims 1, 8, 15, 22, 31, 38 & 40**, in FIG.9, Spilker, Jr. teaches an implementation for Majority-Combined Composite Code and its method in the GPS system, wherein five signals (C/A clock, Existing C/A code, P clock, Existing P/Y code and new M PN code) are input to the Majority Vote Logic, three of the five signals are majority-logic combined (M, C/A and P/Y are combined, column 5 lines 27-30 & column 6 lines 22-24) to obtain a majority vote signal (the constant-envelope composite signal) inputted to a BPSK Modulator and to a Power Amplifier. When the jamming presents (a desired power distribution changes), the M code is provided to Majority Vote Logic to let the system operable under jamming (column 3 lines 42-45 & column 3 lines 15-18). However Spilker does not explicitly name the interplex modulation, Butman et al. teaches the phase-shift-keyed/phase-modualted (PSK/PM) multichannel system called Interplex in Fig.2 (Abstract). As Spilker, Jr. using the constant envelope digital phase modulation (column 2 lines 48-54) in the GPS satellite system, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the Spilker et al.'s BPSK Modulator with the interplexing feature taught by Butman et al. in Fig.2 to

reduce the cross-modulation loss for improving the performance of multichannel system (Abstract).

Regarding **claims 2-6, 10, 16-20, 24-25, 32-36 & 41-42**, Spilker, Jr.' system modified with Butman et al.'s teaching teaches the majority vote logic/combiner taking three pulse trains: the C/A code, the P code, and the M code (column 5 lines 52-54), outputting a combined pulse train with 1 whenever tow or more of the three composed signals is one and –1 whenever two or more of the three composed signals is –1 (column 5 lines 55-57 '071), wherein the combined pulse train interlacing values of the composed signals to the majority vote based to the majority vote algorithm defined (in column 5 lines 52-54), and Mod 2 Adder with data to one of the inputs d_i of the BPSK Modulator (the interplexer, d_1 or d_2 of Fig. 1, Butman). The Spilker, Jr.' system modified with Butman et al.'s teaching has the structure and performs the subject matter recited in the claims.

Regarding **claims 7, 21 & 37**, in FIG.9, Spilker, Jr.' teaches chip synchronous pseudo-noise codes (column 5 lines 52-54).

Regarding **claims 9, 23 & 39**, in FIG.9, Spilker, Jr. teaches the multiplexing loss from combining three signals is substantially the same for each of the five signals.

Regarding **claims 11 & 26**, The Spilker, Jr.' system modified with Butman et al.'s teaching the BPSK Modulator comprising multiple phase modulators $\otimes$ (Fig. 1 of Butman); multiple attenuators $\wedge\wedge\wedge$ and a combiner $\sum$ to combine the in-phase and qudrature components of channels.

Regarding **claims 12, 27 & 43**, in FIG.9, Spilker, Jr. teaches the BPSK (QPSK, column 2 lines 46-54).

Regarding **claims 13-14, 28-30 & 44-45**, in FIG.1, Spilker, Jr. teaches GPS, CDMA (column 1 lines 55-67) and remotely programmable implementation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jayanti Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang
April 27, 2005

YOUNG T. TSE
PRIMARY EXAMINER